CLAIMS:

1. A bi-specific T cell which expresses and bears on its surface a viral antigen T cell receptor and cancer antigen-specific chimeric receptor.

2. The bi-specific T cell of claim 1, wherein the chimeric T cell receptor comprises an intracellular signaling domain, a transmembrane domain and a cancer antigen-specific extracellular domain.

3. The bi-specific T cell of claim 2, wherein the cancer antigen is selected from the group consisting of CD19, CD20, neuroblastoma antigen and IL13.

4. The bi-specific T cell of claim 1, wherein the viral antigen is selected from the group consisting of influenza, EBV, CMV and adenovirus.

5. The bi-specific T cell of claim 2, wherein the viral antigen is selected from the group consisting of influenza, EBV, CMV and adenovirus.

6. The bi-specific T cell of claim 3, wherein the viral antigen is selected from the group consisting of influenza, EBV, CMV, adenovirus.

7. A method for treating cancer in a mammal comprising administering a therapeutically acceptable amount of the bi-specific T cell of any one of claims 1-6.

8. A method of abrogating an untoward B cell function in a mammal comprising administering a therapeutically acceptable

amount of the bi-specific T cell of any one of claims 1-6, wherein said cancer antigen-specific chimeric T cell receptor is specific for CD19 or CD20, neuroblastoma antigen or IL-13.

9. The method of claim 8, wherein the untoward B cell function is a B-cell mediated autoimmune disease.

10. The method of claim 8, wherein the B-cell mediated autoimmune disease is lupus or rheumatoid arthritis.

11. The method of claim 7, which further comprises effecting persistence *in vivo* of the bi-specific T cell by administering to the mammal a stimulatory amount of a viral antigen or T-cells expressing a viral antigen, wherein the viral antigen-specific receptor of the bi-specific T cell is the same as the administered viral antigen.

12. A method for effecting persistence *in vivo* of the bi-specific T cell of any one of claims 1-6 comprising administering to a mammal a stimulatory amount of a viral antigen or T-cells expressing a viral antigen, wherein the viral antigen-specific receptor of the bi-specific T cell is the same as the administered viral antigen.

13. A method for effecting persistence *in vivo* of the bi-specific T cell of any one of claims 1-6 comprising administering ganciclovir when the bi-specific T cell co-expresses the HyTK fusion gene.

14. A method for vaccinating patients with a desired antigen by administering T cells genetically modified to express the desired antigen.

15. A method of eliminating bi-specific T cells *in vivo* by withdrawing administration of the viral antigen recognized by the bi-specific T cell or with-holding viral antigen recognized by the bi-specific T cell.